

from NBMG OFR 83-9

See also 83-10

See geochemical
results.

MINERAL HILL DISTRICT

(117)

Item 6

3110 0006

The Mineral Hill mining district is situated along the lower west-central slope of the Sulphur Spring Range about 40 miles south of the town of Carlin. The district lies within Eureka county and is bordered on the east by the Union district.

The main mine in the district, the Mineral Hill mine, consists of numerous north-south trending open stopes, adits and shafts which occupy the north and west flanks of a small isolated knoll named Mineral Hill. The west side of the hill has been the site of recent (2-3 years old) exploratory trenching and drilling. The other mine sites in the district are little developed by shallow trenching or prospecting.

The early mining history of the district is quite interesting and well documented. The first silver ore was mined in about 1868 and shipped to Austin for treatment in the Manhattan mill by roasting and pan-amalgamation. The preparation of the early ore is of significance because an unusually good recovery was made (better than 90%) using the Reese River and Washoe processes. Also several years latter, the tailings or roasted chloridized ores from the deposit were successfully retreated and this was considered a break through in metallurgy (Toll, 1912). Mining of the deposit continued vigorously until about 1872 when the Mineral Hill Silver Mining Co., organized just one year earlier, was unable to locate enough ore to cover accumulating expenses. Mining of the deposit continued sporadically through 1936 (Vanderburg, 1938). The total known production from the deposit through 1938 is valued at 2.5 million dollars mostly in silver but also in lead, zinc, copper and gold (Roberts, et al, 1967).

The Sulphur Spring Range near Mineral Hill and Union Summit is underlain by Ordovician siliceous sediments and Devonian carbonate rocks. The units are generally north-striking and fault juxtaposed. The Roberts Mountains Thrust is exposed along the western flank of Mineral Hill (Roberts, et al, 1967) and is probably an important

control of mineralization at the Mineral Hill mine. Jasperoids and jasperoid breccias form resistant outcrops throughout the district especially along the thrust contact (see field write-up for sample location 135). Extensive, north-striking, high-angle faults bisect the core of the district. Altered igneous dikes are reported to occur near the mineralized areas but none were observed during our brief reconnaissance of the district.

The Mineral Hill mine contains about 2,000' of underground workings which explore a zone of mineralization about 200-300' wide (Emmon, 1910). The discovery deposits outcropped on the surface and the early mining took place at shallow depths (Whitehill, 1873). The host rock for the deposit is Devonian dolomite which, at the minesite, is bleached, sheared, in part recrystallized and generally highly silicified. The bedding of the dolomites, although disturbed by a sheeted shear system strikes northwest and dips steeply northeast. North to northwest-striking, steeply inclined shear and breccia zones cut across the bedding. Replacement of the host rocks by quartz has occurred in the areas of most intense shearing. Massive, irregular-shaped quartz and calcite veins are present in the silicified zones. Sulfide ore from the dump contains irregular stringers and pods of pyrite, galena, covalite, anglesite, barite and cerussite. The gangue mineral is typically massive white quartz. Most samples are fractured or brecciated and contain malachite and azurite on fracture surfaces.

More than 40% of the total mined silver was present as chlorides, although argentite and silver bromide were also mined. Some of the early ore contained as much as 100-200 ounces of silver per ton (Emmons, 1910). Antimony in the form of tetrahedrite, polybasite and stepharite, in addition to molybdenite were also reported to occur in the ore (Lawrence, 1963; Eissler, 1898).

An area of active hot springs just north of Bruffey Ranch is covered by terraced tufa deposits which contain barite and fluorite (Papha, 1979). Several shallow prospects in the area explore sets of narrow, northwest-striking fractures

which cut calcareous spring deposits and underlying hydrothermally altered limestones and minor quartzites. Opaline material is infused along the fractures. Brown translucent lenses of fluorite (?) were noted in opalized breccia in addition to red specks which may be cinnabar (?).

Bulldozer cuts and prospect pits located at the Vict claims about 4 miles south of the Mineral Hill mine explore gossans and jasperoids. Analyzed samples from the area contain significant amounts of silver and gold. The workings lie along intersecting fault zones between the Silurian Roberts Mountains Formation and Ordovician Vinini Formation and Eureka Quartzite (NBMG Mining district file # 117, Mineral Hill district, unpub. report).

In April 1982, Amoco Production Co. completed a new field discovery oil well, the Blackburn No. 3, about 5 miles north-northwest of Mineral Hill on the east side of Pine Valley. Production through December 1982 was 14,228 barrels of oil with an API gravity ranging from 27°-29.9° (Garside, 1983). The new discovery is located less than 4 miles west of the well known Bruffey oil and gas seeps discovered by Mr. R.V. Bruffey in the 1920's. The oil seeps are associated with thermal springs and tufa deposits lying along the trace of a major Basin and Range, range front fault. (Foster, et al 1979).

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- Also see general reference list for Pinon Range.